2: Lee T-5 (1855-1858) 1957
NO6 Comanche NO6

doubt whether there is a race on the face of the whole earth that equals the Comanches. They will lie along the sides of their horses, while under full speed, directing their course at the same time and discharging arrows from under their necks with deadly effect, in a manner astonishing to witness.

If a deer is captured, he brings it in on his horse, throws it to the women whose business is to dress and cook it. If he kills a mustang or a buffalo, he rides into the village and informs his squaw where the carcass may be found, who straightway mounts and goes out in search of it—skins it —cuts the flesh into strips, and returns.

While the men are thus indolent, the women are remarkable for their industry. Besides attending to the menial duties of the camp, working in the fields during the planting and harvesting seasons, they perform extraordinary labors in preparing buffalo hides and bringing them into the soft and pliant condition in which we see them. To do this properly requires about six weeks, and the process may be new to many of my readers.

When the hide is first brought in green, it is placed upon a log so hewed that it presents a flat surface, perhaps a foot in width. With an instrument similar to a common adze, the squaws cut away all the flesh and part of the bulkiest portions of the hide, until the whole presents a uniform thickness. This is a long and tedious operation. They are then stretched upon frames, and rubbed with a kind of pumice stone until the surface becomes furzy. If it should dry in this state, however, it would be hard, stiff and unpliant. To avoid this, they use a preparation composed of basswood bark pounded very fine and mixed with the brains of the deer or buffalo, which is applied day after day until the skin is thoroughly saturated, when it is soft and flexible.

2: Lee T-5 (1855-1858) 1957
NO6 Comanche NO6

The Night Encampment

While crossing one of these little prairies, we espied a 224
bear making his way to the mountain. A part of the Indian's equipage is a *lasso*, tied to his saddle girth, and in the skill and accuracy with which they throw it, they far excel the Mexicans. On this occasion it was brought into use. A couple of them galloped out, one dexterously throwing the noose over Bruin's neck and twitching him on his back, the other as dexterously throwing another over his hind legs, thus subjecting him to a most uncomfortable stretch, as they pulled in opposite directions. A scalping knife soon relieved him of his hide, and a portion of his carcass supplied our evening meal. Bear's flesh is often eaten by them, but is not regarded as equal to buffalo, beef, or venison. They are hunted considerably, however, for their oil, which [281] ●
is used in the preparation of various kinds of skins.

Having descended the western slope of the mountain range, we encamped that night at the extreme point of a narrow valley, which seemed to run up a long distance between the hills. Wearied with a hard day's travel, I hastened 727
to cook my own and Big Wolf's supper—for I was com- 264
pelled to act towards him in the capacity of a servant—and then lay down to rest. Though I brought his water, and cooked his food, and slept in his tent, and was in fact, his menial and slave, Big Wolf never, in a single instance, placed the horn of water to his lips or put a morsel of flesh into his mouth until I had tasted them. This, also, was the case with the two chiefs to whom I subsequently belonged. Whether it was through fear of poison, or dictated by some singular superstition, is more than I am able to determine.

Setting out again early in the morning, we traveled down 000
the little winding valley until it opened into an extensive plain. Here we struck a narrow but very rapid stream, when

3: Wallace & Hoebel E-4, 5 (1933, 1945) 1952
NO6 Comanche NO6

Meeting of the Dragoons and Comanches in 1834
From George Catlin, *North American Indians* (1857)

[Facing p. 14]

A Comanche camp
From George Catlin, *North American Indians* (1857)

3:Wallace & Hoebel E-4, 5 (1933, 1945) 1952
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to cook stone-boiled soup. The dried excrement (chips) of the buffalo burned slowly and made a hot and lasting fire for both warmth and cooking; it was sometimes used ceremoniously as a support to keep some sacred object from touching the ground, and it was so endowed with power that scouts swore their oaths of veracity on a pile of buffalo chips. The bones, hoofs, and horns of the buffalo were fashioned into cups, spoons, and ornaments; and the horns were occasionally fashioned into bows or worn on headdresses on special occasions. Sinews from the back made bow strings and thread. Ropes were made from the twisted hair. The hide was used to manufacture clothing, lodge coverings, thongs, saddles, bridles, and bags. When properly finished with the fine coat of wool and the hair left on it, it provided an unusually warm robe. Freed from the hair and dressed, it constituted a summer blanket. A green hide served for a pot before the white traders brought kettles, and braided strands of rawhide provided an excellent rope.

There was a time, according to Comanche legend, when the Indians did not have access to the buffalo. In the version recorded fifty years ago by H. H. St.Clair, Coyote effected their release by a ruse.[33] In a hitherto unpublished version given by That's It in 1933 it was *Ka:wus,* the Culture Hero, who turned the trick.

« « « Our knowledge only goes to the point where man and the earth were already here.

The People were out playing three kinds of games one day—the wheel game, throwing arrows, and shooting with the bow. A strange man came amongst them. He talked to no one. Just stood there looking on with a quiver over his shoulder.

After a while he said, "I'll go over there to defecate." He laid down his quiver and jumped in a creek. While he was down there, a young man went up and looked in his bag. There was a nice piece of fat in it. He took it up and showed it to the other Indians. They all wondered where that old man came from. "He certainly has plenty of meat," they all said.

Then they all plotted to stop playing at meal time. They left the

[33] H. H. St. Clair, "Shoshone and Comanche Tales," *Journal of American Folk-Lore,* No. 85 (July–September, 1909), 280–81.

3:Wallace & Hoebel E-4, 5 (1933, 1945) 1952
NO6 Comanche NO6

IV

Food, Clothing, and Dwellings

ALTHOUGH the subsistence activities of the Comanches centered around the buffalo, theirs was not a one-crop economy. Elk were plentiful in the brushy regions bordering the rivers and their tributaries. The black bear, found in the Cross Timbers, was hunted largely for its oil, which was used in the preparation of hides. The Comanches considered bear meat less tasty than either buffalo or deer. Principally within the region of the High Plains, in the heart of the buffalo country, roamed herds of antelope in great numbers. A herd of about two thousand was once seen at Fort Dodge.[1]

Food was usually plentiful enough that the Comanches no longer bothered, as did the horseless Shoshones, to run down antelope until the frightened and exhausted animals dropped. But they did retain from their Shoshonean background the magical antelope surround that was so widely used by the Indians of the Great Basin.

It was used among the Comanches only when the whole camp was out of food. Then the camp leaders would go to a medicine man or a medicine woman who had antelope power. They would smoke and tell him the trouble. According to Slope's account, the medicine man called for an antelope dance lasting several days to work up his power and to draw in the antelope. He selected two men to whom he gave some of his power for what they had to do. When all was

[1] Garretson, *op. cit.*, 64.

of flour or other supplies while the man came out unencumbered. Moreover, in the way of home industry there was indeed little for the men to do. The Comanches did not work at such specifically masculine crafts as metallurgy and wood-carving. Pottery, basketry, and weaving were unknown.

It was the woman's business to prepare the food, clothing, and shelter, and to care for the children. She made the household articles and bags, brought the wood and water, attended to packing and unpacking on moving day, and helped with making the horse equipage. She followed closely behind the hunter with pack animal and knife, skinned the animals, packed the hides to camp, and by slow, tedious processes converted them into clothing, tipi covering, bags, and other articles.

Hides were prepared differently according to whether they were to be worked into leather or made into rawhide bags. Some skins were tanned on one side only, others on both. The process was not identical for buffalo and deer skins, leather might or might not be smoked, and there were variations due to individual technique in workmanship. White influence affected the implements and technique, so that full details concerning the historic process can no longer be recovered. The essentials of tanning, however, are clear enough. To remove the hair, the skin was soaked on the hair side with a mixture of wood ashes and water, which produces lye. Lime, which was obtained from burned rock, was sometimes used in place of ashes. After the hide was sufficiently soaked, the hair side was scraped against the grain. Some women chose to shave off the hair without previously soaking the hide.

There were various kinds of scrapers. A scraper might be an oval, flat flake of flint chipped down so as to have a rather sharp and even edge all around, and it varied in size, some scrapers being large enough to use in both hands. Buffalo bones were often employed, and after the appearance of the white man, metal scrapers became common. Whether or not the hair was removed, a long and tedious process was required to tan the hide. The essential operations were the preparation of the hide, the application of the tanning mixture, and the subsequent working of the hide to make it soft and pliable.

The green hide, according to the whim of the individual worker,

The Comanches

281 was thrown across a limb, laced to upright saplings (called a rack), thrown across a log flattened on top, or more often stretched upon the ground with flesh side up. If stretched upon the ground, it was made fast by means of wooden pins driven into the earth through small cuts in the edge of the hide. To get the best results in tanning, it was important that before the hide dried, it should be evenly fleshed, by which is meant freeing it of every particle of blood, fat, and flesh. This was necessary for rapid drying as well as to reduce the hide to a uniform and proper thickness.

281 413 Fleshing tools varied from a sharp flint flake or buffalo bone to an instrument similar to a drawing knife. Sometimes a wooden hoe made from the fork of a limb of a tree with the cutting part sharpened and finely serrated was employed. The most commonly used instrument was shaped somewhat like an adze. The cutting edge of this tool was bound to a handle of elk horn with strings of rawhide or sinew. It could be used with one hand. With the appearance of the white man the flint cutting edge gave way to metal blades. The rough, abrasive surface of the dried skin of buffalo tongue was preferred in some bands. As the skin clothing and the skin lodges were made by the women, the fleshing implements were very important and were handed down from one generation to another.

281 With the fleshing tool the worker clipped the skin, cutting off a thin shaving with each blow. The skill of this process lay in so directing and tempering the blows as to cut off the skin and yet not hack through it, and in finally obtaining a perfectly smooth inner surface of uniform thickness. Moistened wood ashes were spread on the fatty, greasy surface from time to time and left long enough for the lye to neutralize the fat. This process completed, the hide was usually left to cure and bleach in the sun for several days, although it might be saturated occasionally in water.

The next step was to make the skin soft and pliable, for if given no further treatment, it became hard and inflexible. One satisfactory method was to place it in a hole in the ground, cover it with water and then tramp it for one or two hours. Most women used a tanning mixture composed of brains, liver, grease, basswood bark, soapweed, and water. The basswood bark or soapweed root was pounded fine and thoroughly mixed with the buffalo or deer brains or liver. Grease

3:Wallace & Hoebel E-4, 5 (1933, 1945) 1952
NO6 Comanche NO6

of any available kind, except swine, might be added. The mixture was then thinned with water to the desired consistency. Brains with nothing added were used frequently. The tanning compound was applied to the hide, on both sides if the hair had been removed, and was thoroughly rubbed in with the hands or with a stone. After it had been worked into the texture, the rawhide was placed in the sun so that the heat might aid in the penetration and distribution of the mixture. The skin was then alternately stretched and rubbed with the hands, or pulled back and forth across a limb of a tree, around a sapling, through a loop of rawhide, trampled, or beaten. The friction developed considerable heat, thereby drying and softening the texture. The hide was then folded and put aside overnight. The next day it was unfolded and laid in the sun to dry. After it was dry, the process was repeated. This procedure was continued day after day until the worker deemed the skin sufficiently soft and pliable.

There was no definite time required for properly preparing a hide. The work was long and laborious, but the women were industrious and time was of little importance to them. A woman worked until she was tired, and then laid her work aside to be resumed at her convenience. The tanning might be completed in about ten days, or it might be extended over many weeks.

A worker could change a skin from its natural white to a yellowish brown on the hair side and to a light yellow or tan on the flesh side by smoking it. To do this, the skin was tied into a chimney shape around a pole or was stretched across a pole and placed over a fire pit filled with rotten wood to produce a smoldering smoke. In either arrangement the skin was placed over the fire in such a way as to prevent the escape of the smoke.[1] Tipi covers were naturally smoked by long exposure, but the women made no special effort to color them. Skins used for shirts, leggings, and moccasins were colored on both sides. According to Catlin, the smoking process kept

[1] This description of the Comanche method of tanning is compiled from the field notes of the Santa Fé Laboratory of Anthropology group and from statements by H. W. Baylor, "Recollections of the Comanche Indians," *Frontier Times*, Vol. VI (June, 1929), 373–75; E. House (ed.), *A Narrative of the Captivity of Mrs. Horn and Her Two Children with That of Mrs. Harris by the Comanche Indians*, 36; R. I. Dodge, *The Plains of the Great West*, 357; T. R. Davis, "The Buffalo Range," *Harper's Magazine*, January, 1869, 160; Carter, *On the Border with MacKenzie*, 284; Lee, *op. cit.*, 150; Smithwick, *op. cit.*, 183; Garretson, *op. cit.*, 27.

The Comanches

281 skins soft and flexible no matter how often they were exposed to moisture.

Every woman made the clothing for herself and her family, as was explained in the previous chapter. From the tanned skins the women also made various kinds of soft leather pouches, among them the long fringed ones for the men's smoking utensils. Some of these [531] bags were decorated with beadwork after the arrival of the white traders, but informants insist that porcupine-quill embroidery was unusual among the Comanches.

281 Although every woman learned to make clothing and bags, it seems that there were only a relatively few who became expert at 463 designing and cutting the cover for a tipi. A mother or wife who wanted to make a tipi gathered the poles, stripped them of their bark and pared them down to the desired size, and possibly pointed the butts. She then most likely went to an expert tipi-maker and asked for her help. She might offer her a present then, or it might be given afterwards. A day for the work was agreed upon. Other women would be invited to join the "quilting party," but the expert was in complete charge and gave the instructions. She usually did the most critical cutting and fitting. During the day the hostess provided her guests with a feast. Although the women worked together, there appears to have been no organization of tipi makers.[2]

492 Since the Comanches spent much of their time on horseback, horse equipage was an important item. Although both men and [463] women worked at it, saddle-making tended to be the specialty of men [727] who were no longer active in war. In later times, however, Mexican captives became specialists at the trade. Saddles were mostly of a modified Spanish type. They were generally made of American elm in three pieces: the bars or seat proper, the pommel, and the cantle. Each part was laboriously shaved down into the desired shape and carefully fitted. The pommel and cantle were made high with but slight pitch; the bars or seat were moderate in length so that the saddle was deep and narrow. Holes were drilled with a red hot awl, the joints daubed with glue, and then the parts were laced firmly together by means of green deer sinew. The joints were scraped and rubbed smooth, and the frame was smeared with an ochre paint. Over

[2] Informants: Kills Something; She Invites Her Relatives.

5: Carlson & Jones E, N-4, 5 (1933)1939
NO6 Comanche NO6

fumes were inhaled. The stems of the latter were tied in bundles with which the Comanche switched themselves.

Yucca roots (*Yucca louisianensis*) were ground up for soap. Various species were used as detergents by Indians in the Plains and the Southwest particularly. The ordinary method of preparation is to strip the bark off the root and beat the root to a pulpy mass. The pulp is cut into small pieces which are dried in the sun and can then be kept until needed. When required, two or three of these pieces are soaked in water for about an hour, after which the water is agitated briskly with the hands. Suds immediately appear, forming a good lather. The Southwestern Indians prescribe yucca suds for ceremonial hair washing and also prefer them for laundering blankets and woolen garments. The roots have a high saponin content; commercial soap has been successfully manufactured from them. Another plant used in toiletry was an unidentified species (Comanche: *nemeʎisas*) of the mint family, the fragrant leaves of which were valuable for perfuming.

The leaves of croton (*Croton monanthogynus*) were said to be ground and mixed with brains of animals for use in curing hides. This and other species of croton were widely utilized medicinally, but we know of no other instance of its employment in tanning. Richardson (19, p. 67) quotes two somewhat varying discussions of Comanche tanning, but in neither of these is any plant material mentioned.

Most tribes of Indians prepared brooms by binding together the tough and moderately flexible stems of some plant, but there seems to be little or no uniformity in the plants thus used. The one specified for this purpose by the Comanche was the snakeweed (*Gutierrezia sarothrae*).

Comanche names were obtained for all the plants collected, yet the informants, although knowing the names, could give no use for a number of them. Professor Kroeber has stressed the importance of collecting and recording negative data of this sort as well as positive data, and lists of "plants not used" have appeared in papers by his students. The Comanche informants could offer no use for the following plants: cattail (*Typha latifolia*), white sage (*Artemisia ludoviciana*), false indigo (*Amorpha angustifolia*), western ragweed (*Ambrosia psilostachya*), a grass (*Elymus sp.*), and two unidentified plants bearing the Comanche names *kusiwɜna*, and *itse* or *ʈiməyhɔ*. It may well be that some or all of these were utilized and that their functions

7: Richardson D-4 (no date) 1929
NO6 Comanche NO6

undertaking. Generally the men did the killing while the women dressed the carcasses, loaded the meat on pack animals, took it to camp, and cooked it for immediate use or dried it as the occasion demanded. Some women were also hunters of recognized prowess.[17] [462]

In seasons of plenty the squaws boned and split the meat, carved it into long chains, and threw it over poles to dry in the sun. Meat intended for immediate consumption was dried or cooked over a fire.

Naturally the Comanche women were adepts at tanning hides. The tanning of a deer skin is described thus:

> Having soaked the skins thoroughly, then throw them over a smooth log leaned against a tree at an angle, and then taking a rib of a deer in both hands, remove the hair by scraping it against the grain; they then stretched and dried them, when they became beautifully soft and white. To color them, they tied several into chimney shape, hung to a limb, and building smoulder fires under them they soon changed to a yellowish brown on the hair side, and light yellow on the flesh side.[18]

A somewhat different account is given by another observer. He states that:

> The skins were first staked down to the ground, flesh side up. With a sharp bone the squaw then scraped off every particle of flesh; next the scraped surface was spread with lime to absorb the grease, after which the surface was spread with the brains of the animal, rubbing it in and working it over till the skin became soft and pliable, the process requiring days and days of hard work.[19]

All authorities agree that the Comanches were unexcelled as horsemen. Catlin was amazed at their trick of dropping their body

17. In Notes Taken With Marcy, Parker tells of one woman, the widow of the Penateka chief, Santa Anna, who was said to have killed with her rifle as many as fifteen deer in one forenoon (pp. 192-193). Captain Marcy tells how he observed two young Comanche women of a northern band mount their horses and pursue and lasso each a young antelope which they brought back in triumph to the camp. Exploration of the Red River, 95.

18. Parker, Notes Taken with Marcy, 198-199.

19. Noah Smithwick, The Evolution of a State, Recollections of Old Texas Days, Compiled by his daughter, Nanna Smithwick Donaldson, Austin, Texas (not dated).

32: Gilles O,X-3 (1902-c.1910) 1974
NO6 Comanche NO6
Oklahoma

camp functioning properly. The tasks were varied and time-consuming, and no one woman could have taken care of all of them.

The warrior-husband was the killer of game, the procurer of buffalo meat, the Comanches' principal source of food. He had to have two sets of trained horses—one trained for war, the other for the killing of buffalo. In either pursuit, his life was largely dependent on the horse. He manufactured both his riding gear and his weapons, and he trained his own horses. His fighting was practically on a twelve-month basis, since, though the Comanches did not like winter fighting, most of the ambitious warriors made raiding expeditions into Old Mexico when the group went into winter camp.

The husband, therefore, could be of little or no help around the camp, and the labor had to be divided among the women. Usually one of the women was an expert horsewoman and had the responsibility of her husband's horse herd, which often numbered a hundred or more. When the fall hunt was on for the winter's supply of meat, the wives did the skinning and butchering. They dried the meat and made the pemmican. Also, they prepared and tanned the hides. After the tanning came the making of clothing. This included everything the family wore, both in summer and winter. Since there was neither needle nor thread, the holes in the leather were made with a stone awl or one made from bone, and sinew taken from along the backbone of a buffalo or deer was used for thread.

Other hides were converted into robes for bedding or into covers for the tepees. When camp was moved, tepees had to be taken down and fastened on travoises, like all the other camp gear, and then camp must be set up again at the new location. All of this was strictly woman's work.

Somewhere, sometime, during breathing spells from all these duties, the women bore babies, nursed them, and raised them to be good Comanches. And all this was in a society without a recognized medium of exchange, in which no one could hire anything done. The Comanches did, however, utilize slave labor. Successful warriors furnished captive women to their wives for helpers. These captive women were given the opportunity to trade their slave status for wifehood, and captive girls were carefully trained to become Comanche wives. Captive boys were trained as warriors to fill the vacancies in the warrior ranks. In addition to members of other tribes, Anglos, Spaniards, and Mexicans were abducted to be made slaves.

Beaded Small Pouch Figure 35

A small but elaborately decorated pouch from the Comanche (Figure 35) may have served a woman as a container for small toilet articles. Presumably it was worn on dress occasions, supported by the two twisted buckskin cords passed under a woman's belt. Probably the ends of the cords hung free so that the rolled metal cones attached to them would jingle as the woman moved, as would the similar metal jinglers attached to the cut fringes of the top and base of the pouch. The body of the pouch, of reddish-brown buckskin, measures but 8 cm. in height, and 7.5 cm. in its greatest width across the bottom. The vertical seams at each side of the pouch and the tie cords are edged with blue and white seed beads. Even smaller seed beads are used in decorating the front surface of the pouch and flap. Designs on the flap comprise a small rosette with four projecting triangles, and a border band of triangles on a blue ground. Rounded and less precisely defined elements appear in the 1.5 cm. wide beaded horizontal band at the base of the pouch. Bead colors are predominantly the primary ones, red, yellow, and blue, although a few green, pink, and white beads are used. Perhaps the most significant aspects of this pouch historically are its proof that the type occurred on the Southern Plains prior to 1850 and that, even at that early time, small seed beads were employed in its decoration.

Comanche Woman's Upper Garment Plate 20 and Figures 36-37

A handsome upper garment for a Comanche woman was ingeniously fashioned from a single deerskin (see Figure 36) which measured 106 cm. long by 60 cm. wide in its center dimensions. The basic form of the deerskin has been little altered, even the leg extensions being preserved. A transverse slit in the skin 25 cm. in length provides the hole for the wearer's head and neck, and the garment is draped over her shoulders with the head portion of the skin in front and the tail portion behind. Plate 20 shows a front view of this garment, as worn by Miss Vivian Poolaw, a young Kiowa-Comanche woman from western Oklahoma. Although the center of the hide falls but 52 cm. below the neck opening, the deer legs extend below the wearer's wrists. Primary decoration consists of a blocky reddish-brown painted area extending over the shoulders and down the center both in front and in back. (See Figure 37, showing a back view.) The garment is slightly longer in back (54 cm. on the midline). Note also the long cut fringe at each side which conceals the upper arms and upper forearms, and the much shorter cut fringes on the bottom edges of the garment in front and back. Rolled metal jinglers are attached to a few of the short fringes in front. There is a decorative border of brass tacks around the neck opening and a row of buckskin string pendants about 15 cm. below the neck opening at both front and back. On one of these front strings are strung five large beads, two blue and three red.

Presumably this handsome garment was worn by a Comanche woman on dress occasions rather than for daily wear, which may account for its difference in construction from the fitted upper garment pictured in Lino Sánchez

[p. 185]

[TEXT CONTINUED ON PAGE 188]

412 it would shrink as it dried and bind the blade securely to the handle. In 189
284 using this tool to remove the hair or to chip the inner surface of a buffalo
412 hide to an even thickness, the woman stood on the hide, bent over, and, with
281 the sharp blade nearly perpendicular to the surface of the hide, performed
412 her painstaking task with vigorous strokes, holding the tool with both hands.
[171] Elk horn-handled skin-scraping tools of this kind were widely used among the Plains Indians, as well as the Shoshoni and their neighbors west of the Rockies, in historic buffalo days.[24] This may be, however, the earliest well-documented example of this useful tool from the Comanche.

24. Wissler (1910, pp. 67–68) pictures four of these adze-like tools equipped with blades and gives the tribal distribution of this type of skin-dressing implement.

167: Peters T-5 (1843) 1877 NT13 Navaho NT13
Comanche NO6

I derived, and minutes made at the time, will now only enable me to give you the modus operandi of extracting their dyes, without being able to give you the names of the ingredients. The specimens I had been enabled to collect have become dried up, and many have been lost by crumbling, and I was not enabled to procure seeds or other means of reproducing the plant, and am not sufficiently a botanist to give you a technical description of them. I can give you the facts only, but these are of sufficient importance to awaken curiosity, and lead to the investigations of secrets by those more intimately connected with the subject treated of, and I think of sufficient importance to have that enquiry efficiently made under governmental auspices.

The colors most admired by the Camanches and Navajoes are crimson, blue, purple and green; consequently these colors are the most common among them in all their shades; and though in their weavings they blend these with brown, yellow and other colors, with singular judgment and taste, yet it is the brilliancy of those that you most admire.

All their primitive colors are the products of the prairie and mountain flowers, and their semi-colors are composed of these and the inner bark and roots of but few other plants combined in such proportions as the hue intended to be produced. They have no mineral dyes that I am aware of. Many of these flowers are small, indeed most of them; and the plants of low size, and begin to bloom in February, March and April, and continue till summer. During the blooming, the flowers are gathered early in the morning, with the dew upon them, and dried of the dew under a shade. The leaves are carefully picked off, the stems and such as have their petals covered with pollen of another color —*e. g.*— such as are purple or scarlet with petals of yellow or white pollen, are carefully separated from it. Particular flowers only are selected: all flowers of purple color are not used to dye purple, and so of every other color, but such only as are known to make an indelible dye.

When the desired quantity of leaves are collected they are carefully and cleanly bruised and into them a small quantity of ley (I shall hereafter describe it) is put, but only enough to make

167: Peters T-5 (1843) 1877 NT13 Navaho NT13
Comanche NO6

N C 386 281 415

a thick paste — which has the property of loosening the dye from the fabrics, and facilitating its extraction. A small bag shaped like a money purse, and but little larger, made of new dog skin, deer or wolf skin, tanned by the Indians in a manner peculiar to them, is used to compress the juice from the pulp. This bag, a foot or eighteen inches long and three or four inches wide, is half filled with the pulp. Two small handles of wood are stuck through the ends of the bag, about the length of a corkscrew handle, and used to grasp a firm hold, and as levers by which the bag is twisted until the juice is extracted through the pores of the skin, which are very open.

Whether extracted or not for immediate use, the dye is carefully bottled, in glass if it can be procured, or in small bladders, if glass is not to be had. I say small bladders, because if put away in large quantities, the dye sometimes spoils, they say, and produces dingy colors. When put away for future use the light is carefully excluded by overwrapping with skins, or any thing else, and generally buried in the ground under a shelter in which fire is not used, so as to exclude heat. The dyes, however, are generally used soon as extracted, as during the winter the women prepare their best wool, and have it ready in the spring and summer for the process of dying.

N C 386 824 415

The pulp after compression is put into a small quantity of the same ley above spoken of, and permitted to remain several hours to extract any remaining dye that might be in it, and undergo the same squeezing process until no dye remains.

The ley is made with care of the ashes after burning, of the green wood of a shrub very similar to the *Auralia Spinosa*, if it be not the same of a stunted growth. So careful are they of procuring this ash unadulterated, that they have dry parcels of it laid by with which to ignite the green wood, that the ashes may not be commingled with those of other woods. The ley is usually made in a large gourd, well cleaned and dried, with the butt end cut off, and a small hole bored through the point of the neck to drip from. The gourd is three quarters filled with the ashes considerably compressed in it, and by a bale or handle suspended from a bar containing several of them. Each is then filled with